

*AMIA 2128107*

Fig. 9b shows the same circuit as Fig. 9a, additionally marking the areas of the Threshold Circuit, the Set of Switching Stages and the Set of Capacitors.

please replace the description of Fig. 10a with the following amended description:

**Fig. 10a** visualizes the overlapping switching operations of the individual stages of Fig. 9a.

please replace the description of Fig. 10b with the following amended description:

**Fig. 10b** shows the RD<sub>SON</sub> resistance versus the transistor's gate voltage for a single capacitor switching stage of Fig. 9a.

please replace the description of Fig. 11 with the following amended description:

**Fig. 11** shows, in more detail, the gate voltage versus tuning voltage relation for the series of capacitor switching stages, according to Fig. 9a.

please replace the description of Fig. 12a with the following amended description:

**Fig. 12a** shows the capacitance versus tuning voltage for the series of capacitor switching stages, according to Fig. 9a.

please replace the description of Fig. 12b with the following amended description:

**Fig. 12b** shows the Q-factor versus tuning voltage for the series of capacitor switching stages, according to Fig. 9a.

please replace the description of Fig. 14 with the following amended description:

**Fig. 14** visualizes the overlapping switching operations of just 2 stages of the circuit according to Fig. 9a.

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Amendments to the Specifications:

*AgA  
2/28/07*

In the DESCRIPTION OF THE PREFERRED EMBODIMENTS, ~~please replace the last paragraph on page 18, which continues as the first paragraph on page 19 with the following paragraph: Fig 259 - page 12 - line 14~~

**Fig. 15a** shows a realistic circuit diagram of an implementation, in accordance with an embodiment of this invention. **Amp 1 to Amp n** are said operational amplifiers, **Sw 1 to Sw n** are the switching devices and **Cap 1 to Cap n** are said capacitors that will be switched in parallel, resulting in the total capacitance **varCap**. **R1 to Rn** build the resistor chain to produce references voltages for the ~~translinear~~ operational amplifiers of each stage, as already shown in **Fig. 9a**.

Please replace the last paragraph starting on page 6 with the following amended paragraph:

In accordance with the objectives of this invention, a method to control the capacitance of a variable capacitor in a linear mode through a tuning voltage and to achieve a high Q-factor at the same time generate, is achieved. One method is to switch a variable number of capacitors in parallel, where only very few (ideally only one) are in the active transition phase of being switched on in a continuous mode. All other capacitors of a larger number of capacitors are either already fully switched on or are still completely switched off. One key method is to control the switching function for each of said continual switching devices, when said switching device is in its dedicated active working area in a linear mode. A further method amplifies, by the means of an operational amplifier, the difference of the capacitance tuning voltage and said reference-threshold voltage of each amplifier stage, producing the linear control signal for said continually-steady progressing switching operation. Another method generates a set of reference values, one for each of said amplifier stages. A tuning voltage is supplied to the circuit, dedicated for the voltage controlled capacitance change, to all of said amplifier stages.

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In the BRIEF DESCRIPTION OF THE DRAWINGS., please replace the description of Fig. 9a with the following amended description:

**Fig. 9a** shows a circuit with operational amplifiers in the control signal path and with an alternative reference voltage-threshold circuit.

*insert after Fig. 9 on page 9 after line 14*  
*NYA 2/28/07*  
please replace the description of Fig. 9b with the following amended description: